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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/609,178 | 06/30/2000 | Robert J. Deri | IL-10504 | 2665 |
| 7590 | 05/02/2006 | | EXAMINER | |
| L E Carnahan Agent PO Box 808 L-703 Livermore, CA 94551 | | | WOOD, KEVIN S | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2874 | |

DATE MAILED: 05/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/609,178

Applicant(s)

DERI ET AL.

Examiner

Kevin S. Wood

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,6-15,22 and 24-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,6,7,9-12,24 and 25 is/are rejected.
- 7) ☒ Claim(s) 8,13-15,22 and 26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

FINAL REJECTION

Response to Amendment

1. This action is responsive to the Amendment filed on 6 February 2006. Claims 2, 3, 5, 16-21 and 23 have been canceled. Claims 4, 7 and 11 have been amended. New claims 24-26 have been added. Claims 1, 4, 6-15, 22 and 24-26 are pending in the application.
2. Based on the amendment, claims 2, 3 and 20 are no longer improper because they have been cancelled. Claim 11 is no longer improper because the amendment to claim 11 cancelled the improper language.

Drawings

3. The drawings were received on 6 February 2006. These drawings are accepted. The objections to the drawings have been withdrawn.

Response to Arguments

4. Applicant's arguments filed on 6 February 2006 with respect to claim 1 have been fully considered but they are not persuasive. The examiner has thoroughly reviewed the applicant's arguments but firmly believes the cited reference(s) to reasonably and properly meet the claimed limitations. The applicant's primary argument is that U.S. Patent No. 5,805,759 to Fukushima does not disclose each of the claimed limitations of claim 1. Specifically the applicant argues that the Fukushima reference does not disclose "a plurality of filter modules positioned to receive outputs

from said collection optic assembly". The examiner respectfully disagrees with this argument. The basis for the applicant's argument is the assumption that diffraction gratings (24 and/or 26) within the Fukushima reference are used to meet the limitation of "a second diffraction grating positioned to receive outputs from said first mentioned diffraction grating". However, the examiner has clearly stated in the previous action that the diffraction grating (24) of the Fukushima reference meets the limitation of being the claimed "second diffraction grating" of claim 1. Therefore the attenuators (6) of the Fukushima reference meet the limitations of "a plurality of filter modules positioned to receive outputs from the collection optic assembly" and the beam splitter (48) disclosed within the Fukushima reference meet the limitations of "a collection optic assembly positioned to receive outputs from the second diffraction grating" as claimed within claim 1. The applicant's interpretation of the Fukushima reference and its failure to disclose all the claimed limitations seems to be based in the assumption that the "at least one diffraction grating" and "second diffraction grating" of claim 1 are pairs of diffraction gratings. The claim language does not support this limitation and therefore the applicant's argument is persuasive.

5. Applicant's arguments filed on 6 February 2006 with respect to claim 7 have been fully considered but they are not persuasive. The examiner has thoroughly reviewed the applicant's arguments but firmly believes the cited reference(s) to reasonably and properly meet the claimed limitations. The applicant's primary argument is that U.S. Patent No. 5,805,759 to Fukushima does not disclose each of the claimed limitations of claim 7. Specifically the applicant argues that the Fukushima

reference does not disclose "a plurality of filter modules positioned to receive outputs from said collection optic assembly". The examiner respectfully disagrees with this argument. The basis for the applicant's argument is the assumption that diffraction gratings (24 and/or 26) within the Fukushima reference are used to meet the limitation of "a second diffraction grating positioned to receive outputs from said first mentioned diffraction grating". However, the examiner has clearly stated in the previous action that the diffraction grating (24) of the Fukushima reference meets the limitation of being the claimed "second diffraction grating" of claim 7. Therefore the attenuators (6) of the Fukushima reference meet the limitations of "a plurality of filter modules positioned to receive outputs from the collection optic assembly" and the beam splitter (48) disclosed within the Fukushima reference meet the limitations of "a collection optic assembly positioned to receive outputs from the second diffraction grating" as claimed within claim 7. The applicant's interpretation of the Fukushima reference and its failure to disclose all the claimed limitations seems to be based in the assumption that the "at least one diffraction grating" and "second diffraction grating" of claim 7 are pairs of diffraction gratings. The claim language does not support this limitation and therefore the applicant's argument is persuasive.

6. Applicant's arguments filed on 6 February 2006 with respect to claim 11 have been fully considered but they are not persuasive. The examiner has thoroughly reviewed the applicant's arguments but firmly believes the cited reference(s) to reasonably and properly meet the claimed limitations. The applicant's primary

argument is that U.S. Patent No. 5,805,759 to Fukushima does not disclose each of the claimed limitations of claim 11. Specifically the applicant argues that the Fukushima reference does not disclose a retro-reflector assembly positioned "so as to retro-reflect solely predetermined complimentary outputs produced by said first and said second gratings for redirection by said at least one collection and re-direction optic assembly. The applicant appears to be arguing a narrow interpretation of the claimed language which is not supported by the claim language. The retro-reflector assembly (124) of the Fukushima reference (shown in Fig. 22) only retro-reflects the predetermined complementary outputs produced by the first and second gratings for redirection by the collection and redirection optic assembly. The applicant appears to be arguing a narrow interpretation of the claimed limitations from the specification which has not been claimed. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., outputs 1', 2', and 3' and complimentary outputs 1* and 2*, where only the complimentary outputs 1* and 2* are retro-reflected back through the gratings) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

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7. Applicant's arguments with respect to claims 4 and 7 have been considered but are moot in view of the new ground(s) of rejection. The applicant's arguments with respect to the at least one diffraction grating operated in a Littrow configuration are directed to a newly added limitation which has been rejected by a new grounds of rejection because of the newly added limitation.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1, 6, 11 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 5,805,759 to Fukushima.

Referring to claim 1, the Fukushima reference discloses all the limitations of the claimed invention. The Fukushima reference discloses a wavelength router, having: at least one diffraction grating (20) which utilizes only N wavelengths to interconnect N inputs to N outputs in a fully non-blocking manner, wherein N is any number, a second diffraction grating (22) positioned to receive outputs from the first mentioned diffraction grating, a collection optic assembly (48) positioned to receive outputs from the second

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diffraction grating, and a plurality of filter modules (6) positioned to receive outputs from the collection optic assembly. See Fig. 12 of the reference along with its respective portion of the specification.

Referring to claim 6, the Fukushima reference discloses another pair of diffractions gratings (24,26) that are identical respectively to the first and second diffraction gratings (20,22). See Fig. 12 of the reference along with its respective portion of the specification.

Referring to claims 11 and 12, the Fukushima reference discloses a wavelength router, having: a first diffraction grating (20); a second diffraction grating (22) positioned to receive outputs from the first diffraction grating, wherein the first and second diffraction grating operate so as to utilize only N wavelengths to interconnect N inputs to N outputs in a fully non-blocking manner, wherein N is any number, at least one collection (28) and re-direction (48) assembly positioned to direct inputs to the first mentioned diffraction grating, and a retro-reflector assembly (124) positioned to receive outputs from the second diffraction grating so as to retro-reflect solely predetermined complimentary outputs produced by the first and second gratings from redirection by the at least one collection and re-direction optic assembly. See Fig. 22 and Fig. 23 of the reference along with its respective portion of the specification.

10. Claims 4 rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,043,975 to McMahon.

Referring to claim 4, the McMahon reference discloses a wavelength router, comprising at least one diffraction grating (20) operated in a Littrow configuration which utilizes only N wavelengths to interconnect N inputs to N outputs in a fully non-blocking manner, wherein N is any number, and said at least one diffraction grating being augmented by a wavelength selective coupler which comprises an optical wavelength add-drop multiplexer. See Fig. 6 through Fig. 7F along with their respective portions of the specification.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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13. Claims 7, 9, 10, 24 and 25 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,805,759 to Fukushima in view of U.S. Patent No. 5,043,975 to McMahon.

Referring to claims 7, 9 and 10, the Fukushima reference discloses a wavelength router, having: at least one diffraction grating (20) which utilizes only N wavelengths to interconnect N inputs to N outputs in a fully non-blocking manner, wherein N is any number, a second diffraction grating (22) positioned to receive outputs from the first mentioned diffraction grating, a collection optic assembly (48) positioned to receive outputs from the second diffraction grating, and a plurality of filter modules (6) positioned to receive outputs from the collection optic assembly. See Fig. 12 of the reference along with its respective portion of the specification. The Fukushima et al. reference does not appear to specifically disclose that the diffraction grating (20) operates in a Littrow configuration. The McMahon reference discloses diffraction gratings in a Littrow configuration for the purpose of making the device more compact. Since the McMahon reference and the Fukushima reference are both from the same field of endeavor, the purpose disclosed by the McMahon reference would have been recognized within the pertinent art of the Fukushima reference. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a diffraction grating in a Littrow configuration for the purpose of making a more compact wavelength router.

Referring to claims 24 and 25, the Fukushima reference discloses the diffraction grating (20) is augmented by a coupler (30) and wavelength selective elements (24,26). See Fig. 12 of the reference along with its respective portion of the specification.

Allowable Subject Matter

14. Claims 8, 13-15, 22 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin S. Wood whose telephone number is (571) 272-2364. The examiner can normally be reached on Monday-Thursday (7am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B. Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin S. Wood
Patent Examiner